

CLAIMS

- 1       1. A fusible bung, comprising:  
2             a first wall having at least one fastening feature by which said bung can be  
3             mounted at an opening in a supporting structure;  
4             a second wall spaced inwardly from said first wall with a vent passage  
5             being located between said first and second walls; and  
6             a fusible link interconnecting said first and second walls and closing off  
7             said vent passage, wherein said second wall is supported by said  
8             fusible link.
- 1       2. A fusible bung as defined in claim 1, wherein said fusible link and said walls  
2             together comprise a unitary body of polymeric material.
- 1       3. A fusible bung as defined in claim 2, wherein said polymeric material  
2             comprises HDPE.
- 1       4. A fusible bung as defined in claim 1, wherein said fusible link comprises a  
2             thin walled section of polymeric material having a thickness of less than or  
3             equal to 0.04 inches.
- 1       5. A fusible bung as defined in claim 4, wherein said fusible link has a width of  
2             less than or equal to 0.312 inches.
- 1       6. A fusible bung as defined in claim 4, wherein said first and second walls have  
2             a dimension in the thickness direction of said fusible link of at least fifteen  
3             times the thickness of said fusible link.
- 1       7. A fusible bung as defined in claim 1, wherein said first wall is a cylindrical  
2             wall and said fastening feature comprises threads located on said first wall.
- 1       8. A fusible bung as defined in claim 7, further comprising at least one safety  
2             vent formed as a radial opening extending through said threads in said first  
3             wall.
- 1       9. A fusible bung as defined in claim 1, further comprising a cover member  
2             located within a central region of said second wall, wherein said first and

- 3 second walls, said fusible link, and said cover member each comprise unitary  
4 portions of a single body.
- 1 10. A fusible bung as defined in claim 1, further comprising an opening located  
2 inwardly within said second wall for receiving a relief valve.
- 1 11. A fusible bung as defined in claim 10, wherein said first and second walls  
2 comprise concentric cylindrical walls said second wall includes a threaded  
3 bore for receiving the relief valve.
- 1 12. A fusible bung, comprising:  
2 a first wall;  
3 a second wall spaced inwardly from said first wall with a vent passage  
4 being located between said first and second walls; and  
5 a fusible link interconnecting said first and second walls and closing off  
6 said vent passage, wherein, at lower temperatures said fusible link  
7 prevents the escape of gases through said vent passage and, at higher  
8 temperatures said fusible link melts, thereby permitting the gases to  
9 escape through said vent passage.
- 1 13. A fusible bung as defined in claim 12, wherein said first wall includes a  
2 threaded cylindrical portion for mounting of said fusible bung, and wherein  
3 said second wall is supported by said fusible link.
- 1 14. A fusible bung as defined in claim 12, wherein said fusible link and said walls  
2 together comprise a unitary body of polymeric material.
- 1 15. A fusible bung as defined in claim 14, wherein said polymeric material  
2 comprises HDPE.
- 1 16. A fusible bung as defined in claim 12, wherein said fusible link comprises a  
2 thin walled section of polymeric material having a thickness of less than or  
3 equal to 0.04 inches.
- 1 17. A fusible bung as defined in claim 16, wherein said fusible link has a width of  
2 less than or equal to 0.312 inches.

- 1 18. A fusible bung as defined in claim 16, wherein said first and second walls have  
2 a dimension in the thickness direction of said fusible link of at least fifteen  
3 times the thickness of said fusible link.
- 1 19. A fusible bung as defined in claim 12, wherein said first wall is a cylindrical  
2 wall and includes an annular shoulder, and wherein said bung further  
3 comprises a sealing ring attached to said first wall at said shoulder.
- 1 20. A fusible bung as defined in claim 19, wherein said shoulder includes an  
2 annular rib that engages said sealing ring during tightening of said bung.
- 1 21. A fusible bung as defined in claim 12, further comprising a plurality of tool  
2 engaging surfaces located at said first wall for tightening and loosening of said  
3 bung using a tool.
- 1 22. A fusible bung as defined in claim 21, wherein said tool engaging surfaces  
2 comprise notches located about the periphery of said first wall.
- 1 23. A fusible bung for sealing an opening in a liquid container, comprising:  
2 a circular body;  
3 a sealing ring attached to said body, wherein said body includes at least  
4 one fastening feature such that said body can be attached over said  
5 opening with said sealing ring providing a gas-tight seal of said bung  
6 to said opening; and  
7 a venting fuse unitary with said body and being located radially inwardly  
8 of said sealing ring.
- 1 24. A fusible bung as defined in claim 23, wherein said body includes cylindrical  
2 first and second concentric walls interconnected by said venting fuse.
- 1 25. A fusible bung as defined in claim 24, wherein said first wall includes an  
2 annular shoulder with said sealing ring being seated on said shoulder.
- 1 26. A fusible bung as defined in claim 25, wherein said shoulder includes an  
2 annular rib adjacent said sealing ring.

- 1 27. A fusible bung as defined in claim 23, wherein said venting fuse comprises a  
2 thin walled section of polymeric material having a thickness of less than or  
3 equal to 0.04 inches.
- 1 28. A fusible bung as defined in claim 27, wherein said venting fuse has a width  
2 of less than or equal to 0.312 inches.
- 1 29. A fusible bung as defined in claim 27, wherein said body includes cylindrical  
2 first and second concentric walls interconnected by said venting fuse and  
3 wherein said first and second walls have a dimension in the thickness direction  
4 of said venting fuse of at least fifteen times the thickness of said venting fuse.
- 1 30. A fusible bung comprising a unitary body having a thin walled section of  
2 fusible material bounded on opposite sides by thicker wall sections of said  
3 material, said thin walled section of fusible material comprising a fuse having  
4 a thickness and having a width that is greater than said thickness.
- 1 31. A fusible bung as defined in claim 30, wherein said fuse comprises a thin  
2 walled section of polymeric material having a thickness of less than or equal  
3 to 0.04 inches.
- 1 32. A fusible bung as defined in claim 31, wherein said fuse has a width of less  
2 than or equal to 0.312 inches.
- 1 33. A fusible bung as defined in claim 30, wherein said thicker wall sections each  
2 have a dimension in the thickness direction of said fuse of at least fifteen times  
3 the thickness of said fuse.
- 1 34. A fusible bung as defined in claim 30, wherein said fusible material comprises  
2 HDPE.
- 1 35. A fusible bung for sealing an opening in a threaded flange on a liquid  
2 container, comprising:  
3 a cylindrical exterior wall extending axially and having a threaded portion  
4 located near an axial end of said exterior wall;  
5 a cylindrical interior wall spaced radially inwardly from said exterior wall;

6 a cylindrical vent passage located between said interior and exterior walls;  
7 a venting fuse forming a third wall extending across said vent passage and  
8 interconnecting said first and second walls; and  
9 at least one safety vent comprising a radial opening in said threaded  
10 portion of said exterior wall.

1 36. A fusible bung as defined in claim 35, wherein said venting fuse and said  
2 walls together comprise a unitary body of polymeric material.

1 37. A fusible bung as defined in claim 36, wherein said polymeric material  
2 comprises HDPE.

1 38. A fusible bung as defined in claim 35, wherein said venting fuse has a width  
2 and has a thickness that is less than its width, and wherein said interior and  
3 exterior walls have a dimension in the thickness direction of said venting fuse  
4 of at least fifteen times the thickness of said venting fuse.

1 39. A fusible bung for sealing an opening in a threaded flange on a liquid  
2 container, comprising:

3 a cylindrical exterior wall extending axially and having a threaded portion  
4 located near an axial end of said exterior wall;  
5 a cylindrical interior wall spaced radially inwardly from said exterior wall  
6 and extending axially for a shorter distance than said exterior wall;  
7 a shoulder extending from said exterior wall;  
8 a sealing ring located at said shoulder;  
9 a vent passage interposed between said interior and exterior walls;  
10 an annular venting fuse comprising a thin walled section of polymeric  
11 material which interconnects and is unitary with said interior and  
12 exterior walls; and  
13 at least one safety vent comprising a radial opening in said threaded  
14 portion of said exterior wall.

1 40. A fusible bung as defined in claim 39, wherein said polymeric material  
2 comprises HDPE and said venting fuse has a thickness of less than or equal to  
3 0.04 inches.

- 1        41. A fusible bung as defined in claim 39, further comprising a cover member  
2            located within a central region of said interior wall, wherein said interior and  
3            exterior walls, said venting fuse, and said cover member each comprise  
4            unitary portions of a single body.
- 1        42. A fusible bung as defined in claim 39, wherein said interior wall includes a  
2            threaded bore for receiving a relief valve.